

Missouri National Recreational River

Bank Stabilization Information & Standard Permit Conditions

The following conditions are designed to protect the values for which the Missouri National Recreational River was included in the National Wild and Scenic River system. These conditions apply to activities authorized under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. All other federal and state regulations and requirements shall apply to the proposed activity.

The National Park Service (NPS) reviews all US Army Corp of Engineers permit applications within the 59- and 39- mile segments of the Missouri National Recreational River. The NPS is required to review each proposed stabilization project for its impact to the Outstandingly Remarkable Values (ORVs) for which Congress designated the Wild and Scenic River segments of the Missouri and Niobrara Rivers. Each project is analyzed for its impacts to the following ORVs:

- Free-flow
- Scenic
- Recreational
- Fish and Wildlife
- Cultural and Ethnographic Resources
- Historic Resources

Local site conditions within these river reaches vary greatly and the NPS reviews each proposed project individually for this reason. Adjacent stabilization, channel conditions, and the potential of the project to cause downstream erosion are all considered.

The NPS encourages those considering a bank stabilization project to request a site visit from our staff prior to submitting a permit application with the US Army Corps of Engineers to discuss alternatives and expedite the process. The US Army Corps of Engineers website has more information on the permit application process at:
http://www.usace.army.mil/CECW/Pages/reg_permit.aspx

STABILIZATION

I. BIOENGINEERING TECHNIQUES: Permit Required

Refers to the use of biodegradable material on the active streambank to prevent lateral erosion.

1. Toe protection may include tree revetments, live cribwalls, root wads, live siltation, trench pack, brush mattress, dead fascine, vegetated geogrid, coconut logs, jute-mat logs, or native fieldstone.
2. Plant materials should be native to this area. Native plants are adapted to the soils and weather of this area and should germinate and thrive.
3. All construction materials (e.g., erosion control material, stakes and anchoring systems) shall be biodegradable.
4. A Soil Bioengineering Guide (this document provides information on bioengineering techniques including materials and practices):
http://www.fs.fed.us/eng/php/library_card.php?p_num=FS-683P

II. RIPRAP REVETMENT: Permit Required

Refers to the placement of riprap material on the active streambank to prevent lateral erosion.

1. Riprap shall consist ONLY of native field stone as typically found in northeast Nebraska and southeast South Dakota. Quarry rock (pink quartzite), broken concrete, or any other material is not acceptable.
2. All fieldstone used shall be clean and free of concrete, metal, plaster, or other non-native materials.
3. The fieldstone riprap shall be covered with a minimum of 12-14 inches of soil from the top of the structure down to the ordinary high water line. The soil requirement allows for the settling of soil into the rocks while still providing an adequate seed bed.
4. Streambank revetment slope shall be designed to provide stability to the fieldstone; estimated to be one foot in height (rise) over a three-foot length (run) or flatter.
5. The soil shall be seeded with a mixture of native grasses and wildflower species and preferably, incorporate native trees and shrubs. Annual rye grass or other cover crop is recommended to reduce soil erosion and enhance the success of the native plantings.

Non-native species such as smooth brome and Kentucky bluegrass shall not be used for this purpose.

6. Soil cover and plantings shall be completed immediately upon completion of revetment.
7. Clearing of on-shore and streambank vegetation shall be limited to that which is absolutely necessary for revetment construction.
8. Recommend that any trees or woody vegetation that is removed during rip-rap installation be replaced with native species and increased in quantity.

III. BURIED REVETMENT-Permit May Be Required

Refers to the placement of material in a trench excavated near the streambank. The purpose of this structure is to allow the streambank to erode to the buried revetment which then becomes the stabilized bank line.

1. Conditions for the riprap revetment apply to this practice.
2. The bottom of the trench should be located below the elevation of the ordinary high water mark to provide sufficient toe-of-slope protection.
3. Once the buried revetment becomes the newly stabilized bank, the permittee may need to re-seed to ensure that native vegetation cover exists from the top of the structure down to the ordinary high water mark.

IV. HARD POINTS: Permit Required

Refers to a wide range of deflective structures designed to force the river current to a different location. This practice is generally prohibited but may be considered on a case by case basis.

V. WINDROW REVETMENT: Prohibited Activity

Refers to the placement of material on the streambank. The purpose of this structure is to allow the streambank to erode and launch the piled materials in to the river with the intent of stabilizing the bank. This practice is prohibited and is generally ineffective.